"IT and Patient Safety"
by
Annette L. Valenta, DrPH
Professor, Biomedical and Health Information Sciences, and
Associate Dean for Health Informatics and Technology,
College of Applied Health Sciences, University of Illinois at Chicago

Selected Journal References
(IT terms in titles often abbreviated for brevity)

Ash JS, Gorman PN, Hersh WR. Physician order entry in US Hospitals. *Proc AMIA Symposium* 1998:235 – 9.

Ash JS, Sittig DF, Poon EG, Guappone K, Campbell E, Dykstra RH. The extent and importance of unintended consequences related to CPOE. *JAMIA* 2007;14(4):415 – 423.

Ash JS, Sittig DF, Dykstra RH, Guappone K, Carpenter JD, Seshadri V. Categorizing the unintended sociotechnical consequences of CPOE. *International Journal of Medical Informatics* 2007;76S:S21 – S27.

Ash JS, Stavri PZ, Kuperman GJ. A consensus statement on considerations for a successful CPOE implementation. *JAMIA* 2003;10(3):229 – 234.

Aspden P, Corrigan JM, Wolcott J, Erickson, editors, Committee on Data Standards for Patient Safety. *Patient Safety: Achieving a New Standard for Care. Board on Health Care Services*. Washington DC: Institute of Medicine; November 2003.

Ball MJ, Garets DE, Handler TJ. Leveraging IT to improve patient safety. *Yearbook of Medical Informatics*. New York: Schattauer GmbH; 2003; 153 – 158.

Bates DW, Leape LL, Cullen DJ, Laird N, Peterson LA, Teich JM, Burdick E, Hickey M, Kleefield S, Shea B, Vander Vliet M, Seger DL. Effect of computerized physician order entry and a team intervention on prevention of serious medication errors. *JAMA* 1998;280:1311 – 1316.

Bates DW, Teich JM, Lee J, Seger D, Kuperman GJ, Ma'Luf N, Boyle D, Leape L. The impact of CPOE on medical error prevention. *JAMIA* 1999;6(4):313 – 21.

Bates DW, Gawande, AA. Improving safety with information technology. *NEJM* 2003;348(25):2526 – 34.

Bates DW, Kuperman GJ, Wang S, Gandhi T, Kittler A, Volk L, Spurr C, Khorasani R, Tanasijevic M, Middleton B. Ten commandments for effective clinical decision support: Making the practice of evidence-based medicine a reality. *JAMIA* 2003;10(6):523 – 530.

Berger RG, Kichak JP. CPOE: Helpful or harmful? *JAMIA* 2004;11:100 – 103.

Bobb A, Gleason K, Husch M, Feinglass J, Yarnold PR, Noskin GA. The epidemiology of prescribing errors: The potential impact of CPOE. *Arch Intern Med* 2004;164:785 – 792.

Brown SH, Lincoln MJ, Groen PJ, Kolodner RM. VistA—US Dept of Veterans Affairs national-scale HIS. *International Journal of Medical Informatics* 2003;69:135 – 156.

Campbell EM, Sittig DF, Ash JS, Guappone KP, Dykstra RH. Types of unintended consequences related to CPOE. *JAMIA* 2006;13(5):547 – 556.

Chaudhry B, Wang J, Wu S, Maglione M, Mojica W, Roth E, Morton SC, Shekelle PG. Systematic review: Impact of HIT on quality, efficiency, and costs of medical care. *Annals of Internal Medicine* 2006;144:E-12 – E-22.

Coiera E. Four rules for the reinvention of health care. *British Medical Journal* 2004;328:1197 – 1199.

Colpaert K, Claus B, Somers A, Vandewoude K, Robays H, Decruyenaere J. Impact of computerized physician order entry on medication prescription errors in the ICU: A controlled cross-sectional trial. *Critical Care* 2006;10:R21.

Cutler EM, Feldman NE, Horwitz JR. US adoption of computerized physician order entry systems. *Health Affairs* 2005 Nov/Dec;24(6):1654 – 1655.

Del Beccaro MA, Jeffries HE, Eisenberg MA, Harry ED. CPOE implementation: No association with increased mortality rates in an ICU. *Pediatrics* 2006;118(1):290 – 295.

Doebbeling BN, Vaughn TE, McCoy KD, Glassman P. Informatics implementation in the VHA healthcare system to improve quality of care. *Proc AMIA Symposium* 2006;204 – 8.

Eslami S, Abu-Hanna A, De Keizer NF. Evaluation of outpatient computer physician medication order entry systems: A systematic review. *JAMIA* 2007;14:400 – 406.

Evans RS, et al. Development of a computerized adverse drug event monitor. *Proc Ann Symp Comp Appl Med Care* 1991;23 – 27.

Classen DC, Pestotnik SL, Evans RS, Burke JP. Computerized surveillance of adverse drug evens in hospital patients. *JAMA* 1991;266:2847 – 2851.

Fung CH, Woods JN, Asch SM, Glassman P, Doebbeling BN. Variation in implementation and use of computerized clinical reminders in an integrated healthcare system. *Am J Managed Care* 2004;10(11) Part 2:878 – 885.

Gandhi TK, Weingart SN, Seger AC, Borus J, Burdick E, Poon EG, Leape LL, Bates DW. Outpatient prescribing errors and the impact of computerized prescribing. *J Gen Intern Med* 2005;20:837 – 841.

Garg AX, Adhikari NK, McDonald H, Rosas-Arellano MP, Devereaux PJ, Beyene J, Sam J, Haynes RB. Effects of computerized clinical decision support systems on practitioner performance and patient outcomes: A systematic review. *JAMA* 2005;293(10):1223 – 1238.

Han YY, Carcillo JA, Venkataraman ST, Clark RSB, Watson RS, Nguyen TC, Bayir H, Orr RA. Unexpected increased mortality after implementation of a commercially sold CPOE system. *Pediatrics* 2005;116:1506 – 1512.

Healthcare Information Management and Systems Society (HIMSS). *2008 HIMSS Leadership Survey: 19th Annual*. Available from: http://www.himss.org/2008Survey/index.asp

Hunt DL, Haynes RB, Hanna SE, Smith K. Effects of computer-based clinical decision support systems on physician performance and patient outcomes: A systematic review. JAMA 1998;280(15):1339 – 1346.

Kaushal R, Shojania KG, Bates DW. Effects of CPOE and CDSS on medication safety: A systematic review. *Arch Intern Med* 2003;163:1409 – 1416.

Kawamoto K, Houlihan CA, Balas EA, Lobach DF. Improving clinical practice using clinical decision support systems: A systematic review of trials to identify features critical to success. *BMJ* 2005, doi:10.1136/bmj.38398.500764.8F (published 14 March 2005).

King WJ, Paice N, Rangrej J, Forestell GJ, Swartz R. The effect of CPOE on medication errors and adverse drug events in pediatric patients. *Pediatrics* 2003;112:506 – 509.

Koppel R, Metlay JP, Cohen A, Abaluck B, Localio AR, Kimmel SE, Strom BL. Role of CPOE systems in facilitating medication errors. *JAMA* 2005;293(10):1197 – 1203.

Kuperman GJ, Bobb A, Payne TH, Avery AJ, Gandhi TK, Burns G, Classen DC, Bates DW. Medication-related clinical decision support in CPOE systems: A review. *JAMIA* 2007;14(1):29 – 40.

Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington DC: Institute of Medicine; 2001.

Lyons SS, Tripp-Reimer T, Sorofman BA, DeWitt JE, BootsMiller BJ, Vaughn TE, Doebbeling BN. VA QUERI Informatics Paper--Information technology for clinical guideline implementation: Perceptions of multidisciplinary stakeholders. *JAMIA* 2005;12(1):64 – 71.

Miller RH, Sim I. Physicians' use of EMRs: Barriers and solutions. *Health Affairs* 2004;23(2)116 – 126.

Nebeker JR, Hoffman JM, Weir CR, Bennett CL, Hurdle JF. High rates of adverse drug events in a highly computerized hospital. *Arch Intern Med* 2005;165:1111 – 1116.

Patterson ES, Doebbeling BN, Fung CH, Militello L, Anders S, Asch SM. Identifying barriers to the effective use of clinical reminders: Bootstrapping multiple methods. *J Biomed Inform.* 2005;38:189 – 199.

Patterson ES, Nguyen AD, Halloran JP, Asch SM. Human factors barriers to the effective use of ten HIV clinical reminders. *JAMIA* 2004;11:50 – 59.

Potts AL, Barr FE, Gregory DF, Wright L, Patel NR. Computerized physician order entry and medication errors in a pediatric critical care unit. *Pediatrics* 2004;113:59 – 63.

Saleem JJ, Patterson ES, Militello L, Render ML, Orshansky G, Asch SM. Exploring barriers and facilitators to the use of computerized clinical reminders. *JAMIA* 2005;12:438 – 447.

Simpson RL. Patient and nurse safety: How IT makes a difference. *Nursing Admin Quarterly* 2005;29(1):97 – 101.

Sintchenko V, Coiera EW. Which clinical decisions benefit from automation? A task complexity approach. *International Journal of Medical Informatics* 2003;70:309 – 316.

Upperman JS, Staley P, Friend K, Neches W, Kazimer D, Benes J, Wiener ES. The impact of hospitalwide CPOE on medical errors in a pediatric hospital. *J of Ped Surg* 2005;40:57 – 59.

Wu S, Lehto M, Yih Y, Saleem JJ, Doebbeling BN. Relationship of estimated resolution time and computerized clinical reminder adherence. *Proc AMIA Symposium* 2007:334 – 338.